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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/500,069 | 06/25/2004 | Kwang-Soo Choi | 1728.03 | 9148 |
| 29338 | 7590 | 11/30/2006 | EXAMINER | |
| PARK LAW FIRM 3255 WILSHIRE BLVD SUITE 1110 LOS ANGELES, CA 90010 | | | YU, GINA C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1617 | |

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/500,069 | Applicant(s) CHOI ET AL. | |
| | Examiner Gina C. Yu | Art Unit 1617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/31/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of amendment filed on July 31, 2006. Claims 1, 2, 4, 7-11 are pending. Claim rejection made under 35 U.S.C. § 102(a) and (e) in view of Aubay et al. (US 6905814) is withdrawn and modified to address newly added claim. Claim rejection made under § 102(a) and (e) as being anticipated by Soane et al. (US 2003/0013369); and Claim rejection made under 35 U.S.C. 102(a), (b), and (e) as being anticipated by Marchi-Lemann et al. (US 6132745) are maintained for reasons of record. Claim rejection made under 35 U.S.C. § 103 (a) in view of Glenn (US 6,235,683) is maintained for the reasons of record.

Claim Rejections - 35 USC § 102

The text of those sections of Title*35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4, 7, and 11 are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Aubay et al. (US 6905814).

Claim 1 is directed to a liquid composition comprising titanium dioxide nanoparticles having a particle size ranging from 3-200 nm. The phrase "for promoting plant growth" is a preamble which denotes intended future use or purpose of the claimed subject matter. See MPEP § 2111.02. The preamble here does not define the structure of the composition, and thus no patentable weight is given to this phrase.

Aubay et al. teach film-forming titanium dioxide dispersions for cleaning and disinfecting surfaces comprising TiO₂ nanoparticles which are dispersed in water along with PH regulating acids, and surfactants. See The concentration of TiO₂ ranges from

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0.01% (or 100ppm) to 15 %. In the examples in col. 7-8, dispersions comprising anatase TiO₂ in the form of 40 nm particles are disclosed.

In claim 11, the limitation "in which the aqueous solution is diluted with water" denotes product by process claim. Regardless of whether a separate dilution process is applied to make the composition, the claimed composition reads on the prior art comprising 100 ppm of TiO₂. Also in claim 11, "when applied to the foliage of crops" denotes intended use of the composition. Whether the composition is actually applied to the foliage of crops does not affect the concentration of the prior art composition.

Claim 1 is rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Soane et al. (US 2003/0013369).

Rejection is maintained for reasons of record.

Claim 1 is rejected under 35 U.S.C. 102(a), (b), and (e) as being anticipated by Marchi-Lemann et al. (US 6132745).

Rejection is maintained for reasons of record.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4, and 7-10 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn et al (US 6,235,683).

Rejection is maintained for reasons of record.

Response to Arguments

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Applicant's arguments filed on July 31, 2006 have been fully considered but they are not persuasive in part.

In the remarks, applicants distinguish the Aubay composition from the claimed invention in terms of the purpose of the products. As previously discussed in the rejection, the end use of the composition amounts to a preamble in the claim, rather than a limitation. The intended use or the purpose of the composition does not alter the structure of the composition itself, and thus no patentable weight is given to the end use of the claimed invention.

Applicants also argue that in Example 1 of Aubay the composition contains a dispersion of organic or organosiloxane polymer in addition to titanium dioxide, while the present invention is a "dispersion which includes only titanium dioxide" for promoting plant growth. The argument is not commensurate with the scope of the claims. In claim 1, the claim recites a composition "which **contains** titanium dioxide nanoparticles as active ingredient". By the transitional term "contains", is inclusive or open-ended and does not exclude additional, unrecited elements such as the organic or polysiloxane materials. See, e.g., Mars Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004) ("like the term comprising, 'the terms containing' and mixture' are open-ended.").

Applicants also assert that the presence of adjuvants necessary for plant growth and surfactant for dispersion suggest that addition of material that helps actual plant growth to the composition "consisting of" titanium dioxide nanoparticles of the present invention is possible. The argument is unpersuasive, since the claims actually recites a

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composition containing nanoparticles of titanium dioxide, the claim is already open to other materials, not just plant growth promoters or surfactants. Furthermore, the presence of these materials may suggest the end use or purpose of the claimed invention, but do not confer any patentable weight to the usage of the composition. There is no patentable distinction between the prior art and the claimed composition, and thus the rejection is viewed proper.

The rejections made in view of Sloane and Marchi-Lamm are also viewed proper for analogous reason. No patentable weight is afforded to the intended use of the composition in claim 1.

Regarding the obviousness rejection made against Glenn, applicants again assert that the use of the prior art is different from the present invention. Again, the recited intended use of the presently claimed invention is a preamble, which is not given patentable weight. Examiner also takes the position that the titanium dioxide as claimed meets the prior art metal oxide particles that are taught by Glenn.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gina C. Yu whose telephone number is 571-272-8605. The examiner can normally be reached on Monday through Friday, from 8:00AM until 5:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on 571-272-0629. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gina C. Yu
Patent Examiner



SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER